Modern Medical Resources

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Since no modern doctor or midwife lived in Bang Chan nor visited regularly or on call, the nearest modern medical assistance was at the Health Center[3] in Minburi. This was an out-patient clinic and small hospital established by the Ministry of Public Health to give modern care, instruction, and occasional free issues of such items as dried milk and cod-liver oil. It was conveniently located on the big Saensaeb Canal, near smaller canals and a foot-road, and only a few hundred yards from the bus terminal at the end of the auto road. The staff comprised a first-class doctor, a nurse-midwife (whom we shall call "the nurse"), a dental hygienist and a sanitarian. The main building had offices and pleasant waiting-rooms, with living quarters upstairs for the staff. Adjacent was a well-built and well-ventilated smaller building, with two good-sized rooms, one for general, and the other for maternity cases. The maternity half was divided again into a small room for labor and delivery, and a larger room for recovery with space for 2 persons. Beds were not used; patients were comfortable on the floor with mats. Relatives provided and cooked the food for each patient on their own portable charcoal braziers in a special area. Room and delivery were free, but a charge was made for medicines.

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In Bangkok, 20 miles away, on the northern edge of the city nearest to the community, was the fine new Women's Hospital to which one wife had gone for delivery before she became a Bang Chan resident. The other hospitals of the city were occasionally used for other medical or surgical reasons by Bang Chan residents, but not for maternity cases.

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In Minburi were also a few "second class practitioners." These were not graduates of Thailand's recognized medical schools, but they had some modern medical knowledge. A former medical orderly in the army, for instance, utilized his training to set up a practice. These practitioners used both traditional and modern systems. They would on rare occasions come to a Bang Chan farm house on call. They enjoyed the confidence and patronage of the most educated, progressive, and affluent element in Bang Chan's population, such as the teachers and many of the leaders, both young and old, who, in their patronage, saw themselves as less old-fashioned. Their large practice was lucrative, fees of 1000 baht for a course of injections being cited. Though consulted for maladies of pregnancy, to our knowledge they did no obstetrical work.

3. In 1957 a new building with expanded facilities was opened in Minburi. All our data refer to the old arrangements.

before completing these obligations, the parents lost out on their anticipated reward (cf. L.M. Hanks, 1962).

Since waywardness (nai thĭaŋ) was considered a continuous threat, magical means were taken at the moment of birth to ensure that a child stay close to the family that raised him. The blessing following the winnowing ceremony invoked immovable things: the post, the cat that traditionally never roamed far, the pumpkin that sat and fattened:

> "...Stay at home like the bottom of the house post. Watch the house like a cat. Eat and stay here! Never leave home. Be fat and heavy as the ash pumpkin..."

The most important binding actions utilized, or brought the child into physical contact with, objects long associated with family, in particular the house and land. The umbilical cord was cut on earth or phlai dug from the house-land itself with a bamboo "knife" sliced from one of the deeply sunk house posts. Of these "the knife is the important thing." The phlai also had medicinal purposes. With a feather "from the mother's house" the baby's navel was smeared with cobwebs from a spider whose web indicated long undisturbed residence. They buried the placenta either under some large old tree that stood near the house, or under the house stair. The old family winnowing tray, old clothes, and well-used family possessions were used first before any new furnishings were purchased for the baby. A fire of sakae wood grown on premises boiled the water for the baby and mother, and heated the mother. Sakae "was planted when a house was first built so that every generation of occupants would have it available for use at confinement" and also for firewood at other times (cf. McF. 834). All these binding rites assured that the child being rooted to a home terrain, would not wander frightened, and so "would not cry." He also would be at home to participate in the merit-making that would reconstitute the family in another existence.

If a child were born away from home, how was this bond to his locality established? On one to two occasions when the child was born at the Minburi Health Center, Hauck (notes, 1954) observed a solution to this dilemma. The mothers *returned home, as was customary, within a few hours of delivery* and were established by their respective fires. Their babies were winnowed and laid on their trays with the usual auspicious book, pencil, and needle. Neither tray held any bamboo, clod, nor phlai, however, for these had not been used. On one tray, though, was laid a steel knife from the kitchen, mute proof that a family cutting instrument ought to be there. On another occasion, a father asked to be given his child's placenta so as to bury it on the house site. In so far as possible, people in Bang Chan tried to carry on the old rites.

greater, for relatives were at hand. Some of these ordinary persons developed skills of considerable consequence. 844

If difficulties developed, then a more experienced person, perferably a midwife, was needed. But many a midwife assisted at normal births. Because difficulties might arise from a deficiency of merit either in the mother or the child (one could never know which), many women preferred to have in attendance, for peace of mind, either a midwife or an experienced person to insure the presence of expert help. Sometimes they were engaged in advance, more often just sent for "as pain is increasing," it being not always certain whether the case was normal or not. 844 759

A few women were delivered at the Mīnburī Health Center. These were rarely normal cases. The Center was turned to as a last resort in dire circumstances, with the result that sometimes the woman died in the boat on the way. A few persons of rather more modern outlook, such as wealthy farmers, teachers, and traders, had been delivered there and recognized its usefulness. 844 [845] [847]

The midwives lived in all parts of the community, with 3 in the populous central temple area. No one was more than a half-hour's paddle, or an hour's walk from the home of some midwife. What was desired, however, was a particular person, even though he might not be the most accessible one. 759

Since midwives were all heads of large families their clientele was mostly their kinsmen. They also took care of non-kin who lived in their locality. A daughter or other close relative who had married out would be attended wherever she was, if she did not return home for confinement. 759 571 602

In choosing a midwife, a parturient sought out not only skill but favored a kinsman over a non-kinsman, a close relative over a distant one, a near person over a far.[63] Occasionally, to sustain an image of progressiveness, social superiority or of wealth display, a midwife from outside Bang Chan was imported. Sometimes proximity, convenience, and

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63. A male and 2 female kinsmen-midwives were called by the man's sister to deliver her, and all came. He did not deliver her because she was "too close a relative," but he said a brother "could deliver a sister."

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in the khwan khāo "gift" handy cash. The income was about 40 to 200 baht ($2.00 to $20.00) per year.

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The duties of a midwife were not time consuming if all went well. There was practically no pre-natal care, and a few hours of care was given for only three days after birth. If complications arose, though, the midwife spent long hours away from home. In fact the husband of one midwife grumbled, "You don't receive anything, and just waste time. Sometimes you stay away over night, and no one watches the house or the children."

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In their social role, midwives felt personal but not group solidarity. A solid bond existed between an older midwife and the particular younger one to whom he or she had given training and magic. Those related by blood or marriage sometimes worked together, and even turned over cases to each other if outside demands became pre-eminent. If in trouble on a case, midwives did not call on each other unless as close, affectionate relatives but turned rather for help from a mɔ̄ or to the Mīnburī Health Center. Yet sometimes rivalry was severe. If the family of the parturient felt that no progress was being made with one midwife, they called in another and another. Each did his utmost and then stepped down when it had to be admitted, "My magic is not enough." The final expert who brought mother and baby through before the deposed midwives glowed inwardly with pride and skill and satisfaction that the magic of his particular teacher had proved effective. The sharpness of the competition reverberated through the words, "I pushed the other midwives down." Community standing or "face" was not lost by an unsuccessful case because of the midwives' fundamental role as helpers only, their faith in their own experiences, and again, the conviction that the course of childbirth was merit-determined.

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Though living like other elder citizens of the community, in their social role they were more respected. Known as selfless donors of time and energy for the sake of others, whose successes gave proof of merit and nurturing capacity, they were viewed as assets to the community. In spite of competition considerable affection was evident between some. They were elders before a sea of youth, old friends who had for years lived and farmed side by side, met at ceremonies, and shared many experiences.

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If the case were in difficulty sometimes a mɔ̄ was called, sometimes a midwife or even both. What was the nature of their respective specialties? What in fact made certain midwives "professionals" (tham ǎchīp [Mc.F. 990]) when others who had equal or more experience were not so considered?

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An old woman summed up significantly 2 attitudes saying, "In the old days people made more merit and so lived longer, but because we had no hospitals, the children died younger." The relation of good health and longevity to proper religious and moral behavior was fundamental in Bang Chan. If merit did not suffice, medical attention, traditional or modern, could not prolong life. Children, however, were tender (ɔ̄n) and easily prey to sickness.
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Traditional care could help them, but being delicate and tender like city people, children could also be helped by modern hospital care.

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Between the 2 systems people sensed little conflict, for each patient made a preliminary diagnosis of his symptoms and sought the type of assistance his diagnosis and convenience indicated. mɔ̄ with some knowledge of both systems might offer their patients a choice of remedy. With the right diagnosis, magic, and medicines, a quick cure was expected. if not forth-coming, people were disappointed and moved to another specialist for his help. Modern medicine merely took its place as one more recourse.

The basic handicap of modern medicine was that it had no magical resources or holy water. "Its effectiveness is limited to the properties of the ingredients." Old medicine on the other hand had, in addition to these properties, "The strength of the mɔ̄'s incantation plus the power of every person who learned and used that incantation, back to the time of its discovery, centuries ago." Thus where the medical schemes offered the same specialty, as in fevers, bone-setting, or obstetrics, the old appeared to offer more resources.

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Besides its deficiencies in magic and strength-making attributes, modern medical care had other drawbacks. First, it was not accessible. A trip to Bangkok for medical purposes involved far more time than a day. Mīnburī's Health Center was a feasible trip, even for a woman in labor (stays ranged from 6 to 24 hours). Home arrangements for tending children, feeding buffalo, and other chores were less demanding. Bang Chan's eagerness for local modern care was shown when a Bangkok physician visited Bang Chan for a few times as part of a nutrition study. He was besieged with private requests for medical advice. Secondly, modern medical care was expensive. In Bangkok, after the expense of getting there, taxis, food, and housing costs for accompanying relatives, hospital, and doctor's fees sometimes meant losing the family gold and even land. Mīnburī's costs were closer geared to farm income, but medicines appeared costly. "Modern drugs taste and act better, but the poor have to use the old." Third,

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to make use of modern facilities one suffered confusing and unhappy experiences. Bangkok traffic was dizzying, even if one knew just where to go. Hospitals had beds, not mats, and the personnel were strangers. Foods were often unfamiliar or violated traditional injunctions concerning heating and cooling. People were brusque, impersonal, and overbearing to country people. One woman complained, "I am afraid of the doctor there. She scolds me and does not treat me like city people. She will not explain what the sickness is." Minburī's clinic was small, set up in more familiar terms, and the staff known personally to many villagers.

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Finally, there was the problem of finding an experienced escort, i.e. someone who "knew the way." More was involved than just convenience. In all walks of Bang Chan's life, no one ever presented himself to a school, to a household, anywhere, without a personal introduction from someone who had been there before, and so was accustomed (khoei) to it. It was not hard to find someone who had been to the Minburī Health Center, but it was difficult to find one who had been to a hospital in Bangkok, knew what to do, and had the time, money, and inclination to act as escort. The latter was always a relative by blood or marriage or the sick person's mō himself (Hanks and Hanks, 1955: 160). Actually, five or ten persons might accompany an ill person, only one of which was acting as the recognized go-between. Many of those who had been to a hospital or clinic as patients had previously accompanied others merely as escort, or to visit (Goldsen and Ralis 1955:31).

758 743 184 178 [369] [844] [554]

Who had actually tried modern medicine for one reason or another? About a third of the household heads had used some modern clinic or hospital for treatment or hospitalization (Goldsen and Ralis 1955:31). Use was more frequent among (1) the literate, (2) those exposed to the mass media of radio and movies, (3) those accepting certain urban ways, and (4) those having greater contacts with the city in the way of visits, but users were not of a noticeably higher economic level (ibid:37). Women went no more frequently than men (ibid:32). No figures indicated how many of these occasions were for childbirth, but our interviews point to a small number. Taking the will for the deed, two women teachers who appeared to be the first to plan ahead to be delivered at the Minburī Health Center--but who did not get there because labor was too quick--seemed to be viewing the use of modern methods as a means to higher status.

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Why was modern obstetrics so largely eschewed? What had been Bang Chan's experience, unfavorable or favorable, that colored their attitudes? First, home was the most convenient place for care. Bangkok was ruled out categorically as too far. In fact, Minburī might be too far if labor manifested its normal celerity as the case of the two teachers showed, or if complications had developed. Furthermore, a Chinese resident of Bang

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743 Chan during a period of residence in Bangkok was delivered
844 at the Women's Hospital and at a later pregnancy at the
178 Mīnburī Center. With her last baby, however, she elected
[759] to be delivered at home by the local midwife as more convenient in order to assure from her bed supervision and proper care for her other children. One young woman of very high social and economic standing preferred to import a midwife from a community six kilometers down the canal, and bear her child in her own home rather than attempt getting to a hospital.

Moreover, basically the Mīnburī Health Center was seen
[845] as a place for sick people, while normal childbirth was not a medical matter. To plan ahead for medical care there was to invite an abnormal delivery. The Center also suffered a poor reputation for success because difficult cases, hopelessly advanced, were the usual ones brought in. "At the Center are many ghosts," people said.

743 Some comments were genuinely favorable. The cleanli-
759 ness of the hospital was greatly appreciated. Anyone who
178 witnessed the skill of the doctor or nurse-midwife held it in respect.

Techniques of delivery were sometimes mistrusted,
75 sometimes admired. "They pull out the child with their
844 hands, which is dangerous." "The fecal pump is unneces-
743 sary." "One may not crawl during labor." A mō-midwife
178 who witnessed the nurse-midwife at work said approvingly, "She can force a baby out, but our midwives can only press harder," and "The hospital knows when a baby will come." The stopping of the flow of birth fluids by an injection was resented as affecting strength adversely, yet the injection that "made the placenta come so fast I couldn't notice it," or "gave the mother strength when the baby was stronger than she" was liked. The pills for pain were enthusiastically received. The hospital's closed windows "protected the baby from wind element," but the journey home dangerously exposed it and the mother to cooling wind. The dietary recommendations during recovery appeared wrong: eggs, which were "too cooling," or fruit, which "gave no strength." The suggestion of a nurse that scissors be used to cut the cord was resented as uncomprehending of village living problems ("we haven't any!" and "scissors always rust") and also as unwise ("rust gives tetanus poisoning").

75 Another criticism was the lack of personal warmth and
844 pity manifested by modern physicians and nurses, unlike
178 the attentive, reassuring mō. By forbidding abdomen-pressing, they were accused of "not doing enough," even of

"not wanting to help." The mother and baby were seen as having to fend for themselves. The very confidence built up in modern medications led to a conviction that doctors maliciously withheld available, effective medicines. "She died at the Center because she needed medicine but was not given any." Personality factors sometimes were involved: one doctor was considered incompetent, fearful of complicated obstetrical cases, and brutally indifferent to a countryman's views and circumstances--("Since we have no room, why don't you charter a bus to take your parturient wife to Bangkok?"), whereas another was friendly and wise. Since doctors were part of the respected government hierarchy which enjoyed superior knowledge and status, and also of the supposedly compassionate medical tradition, they were expected to be competent, kind, and protecting. Those who failed in winning confidence undermined the status of modern medicine.

The midwives themselves thought of the Hinburi Center not only as a recourse if a case were in deep trouble, but also as a personal convenience. One male midwife, who was also a headman, mō and carpenter-contractor, was often too busy to stay with a woman in prolonged labor. To turn her over to another midwife other than a kinsman would damage his reputation. Knowing Hinburi well, he found the Center a convenient solution to his dilemma. He had respect for the nurse-mid wife's skills, which he had witnessed, and regarded the doctor as a colleague on his own level, a view probably not reciprocated. The women midwives, too, always considering themselves at bottom volunteers, when faced with pressing home chores and the "impossibility of turning a relative over to another midwife," utilized the impartial service of the nurse-midwife. One cloud impeded the female midwives from making full use of the occasion as an opportunity for observation and so instruction. They refused to identify themselves as midwives out of fear of legal sanctions. Having neither taken the course prescribed by the government for "ancient" midwives nor paid the fee, they were not licensed. Thus, they lived in dread of fines if their calling became known outside the community. They knew they were permitted to deliver babies within the family, but outside those rather hazy boundaries, they took refuge in an old view, "I am not a midwife. I only help out of pity."

All in all, the people of Bang Chan had fitted modern medicine into their broad medical scheme where it could be accepted on its merits, if not blocked off by inconvenience, high cost, and discourtesy.

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friends to say positively that they cannot and will not endure it. For such, some other course has to be taken by the use of ...medicines" (p. 81).[74]

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The most noticeable modification in the customs of childbirth was the shortened fire-rest which had shifted from 29 or so days, to 9 to 15 or less; this was practiced by everyone.[75] Another conspicuous change adopted by a few dozen persons was the substitution for the open fire of a heat-making contrivance, in particular the hot-ashes or charcoal burning container (chamber or fire-box: fai chut) and the hot water bottle. (The hot brick and wrapped pot of hot salt were probably old alternatives.) New, of course, were the occasional utilization of the Minburi Health Center; the second class doctors; and, somewhat more generally, the novelties of the market, such as flowered net-frames, mits, shirts, pillowcases, and pacifiers. There were a few other changes noted.

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Who took up the innovations? First, they were women who had already successfully borne a child, undergone a full fire-rest, and were bearing their second or later children. Being already ritually mature (suk) and of proven competence in childbearing, they had no reason to fear a change and nothing to lose. Age and experience gave them the self-confidence, authority, and interest to ponder their experience and decide on ways to increase their effectiveness and their comfort. They had the right to do so because of the fundamental autonomy of the individual. Strong-minded old ladies might criticise the substitution of the hot-ashes container for the fire, feeling it was not hot enough to do the job, but they never questioned the woman's right to do so. The least likely to adopt

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74. On the other hand, Bradley (pp. 82-83) was puzzled why his success in saving the life of so revered a personage as the Queen by taking her off the fire, a move so thoroughly approved by the King, did not cause universal abandonment of the fire-rest. He was not aware that many a mō did the same (with the possible exception of the sponging with tepid water), that as a mō-with-a-particular-specialty he could do anything he wanted but no one would copy it without personal formal authorization, and that he was up against the deeply-rooted rite of female maturation concerning which even royalty had no authority (Bangkok Calendar, 1871:107-109).

75. We have no data on whether this shortening process set in in the 1930's, or after World War II in the late 1940's. The month-long rest was universal in the 1920's.

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home brew; rub-on medicine (yā chup) instead of a fire or fire-container; canned cows' milk, and nursing bottles for the baby, and the bottles washed with salt; the transfer of a baby from the tray to the cloth cradle before the termination of the fire-rest because "he needed fresh air;" and the rejection of the turmeric rub against the wind element as "dirty and ugly."

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To use modern medical care was becoming prestigeful. Most spectacular here was a case of a prosperous and educated man who had had 9 children, then "feared he could not feed them all," so underwent voluntarily a vasectomy. Patronage of the second class doctors who used modern medications but explained them in traditional terms was frequent among the well-to-do. The Mīnburī Health Center, a resource in case of over-long and difficult labor, was beginning to be seen as a fashionable place to go for medical care and parturition. The case of the 2 teachers who laid plans ahead to go to the Center (but their quick labor precluded attempting to get there) showed that prestige had a stronger lure than convenience at times. It was much more convenient to bear a child at home, yet one of these teachers even talked about wanting to be delivered in Bangkok at the Woman's Hospital, an extreme of prestige and practical inaccesibility.

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The drive toward progressiveness led to conscious re-examining of those "old ways" that could be visually tested. One woman said, "There are fewer spirits (phī) nowadays." There was the mother who pondered the maxim about burning up all the wood collected by the husband to make a child finish tasks when he grow up. Finding it not true, she abandoned it at her next confinement. A man said that the old belief that papaya should not be planted near the house because "it dies easily and doesn't like water," and so would affect a child, was "unreasonable because the harm was not specific [e.g. a threat to skin or eyes]. If specific, I might believe it." An opening wedge of disbelief was noted where a woman gave no bit of rice to her baby to start a habit for later benefits because "she was told but didn't believe it," and another who said the "winnowing rite was not important."

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In addition to prestigeful changes were those due to individual circumstance, taste or preference, and convenience unaffected by social aspirations. One woman rejected going to the Mīnburī Center for delivery and took up the hot-ashes container instead of a fire because she could better direct her older children, and "it was less hard on them." A poor woman took no medicine during pregnancy because she had no money to buy it. A comment that of recent years medicines were purchased because "women are too lazy to make them up" as in the old days, sounded more personal than socially significant. A change induced by lack of money was that "hot spices

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are less eaten today because they are too expensive."

A slight trend towards depersonalization might be part of the aping of urban behavior, or idiosyncratic, or of more general significance.[76] The Minburi Health Center may have been used to avoid certain face-to-face situations. A woman whose labor was prolonged was taken there by her (male) midwife who had to get to a meeting. He preferred the impartiality of the Center to turning her over to another midwife. A woman took up the hot ashes container so "others would not have to wait on her." Another appeared to have obtained a midwife from outside the community rather than seek out someone inside and closer at hand. A very poor woman used no boiled water because of inadequate help in the household to prepare it. Whatever the circumstances of her social isolation, ordinarily kin or neighbors would have seen to it that this job was done. This episode too was watched by neighbors who commented that since her health remained good, boiling might be unnecessary. Finally, to advertise certain medicines, a firm handed out yan, the magically inscribed cloth, to suspend on the holy cord that surrounded the mother. This was a long way from the personally inscribed "yan" of old.

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A final reason for the acceptance of change was the larger number of choices of behavior because of a broader horizon. Bang Chan had never been an isolated community, for pilgrimages and visiting through easy boat-travel had been for decades part of its life. Yet the growing number of literates, the establishment of bus and other transportation services to the city, the experience, for a few, of work in Bangkok or of military service in Korea, the continuous association with non-Thai, (Chinese, Muslims, a Cambodian, and now the Americans), and the now somewhat diversified economy of the community all led to the increased familiarity with other ways of doing things. Patterns of childbirth were already reflecting this awareness.

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Unchanging in the scene at childbirth was the necessity of supernatural assistance, and heat to ripen and restore the mother.

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76. I feel this evidence is slight, and set it down merely as a point for future observation.

had 2 to 4 children. In each case, the information obtained related to the most recent delivery.

Delivery. - In Bang Chan delivery usually took place at home. Four of the mothers we interviewed went to the home of a relative or relative-in-law. In two of these instances the relative was also the midwife; in the others the mother was apparently seeking a place where she could be more satisfactorily looked after than at home.

Three women went to the Health Center at Minburi, about 3 miles from the center of the Bang Chan community, to have their babies. Two of these mothers expected to be delivered at home but were taken to the Health Center when labor proved long. All 3 returned home either on the day of delivery or the next day and lay by the fire. Two others, both school teachers, told us in advance that they expected or hoped to go to the Health Center, but when labor began they were unable to do so because their babies came so quickly. Aside from the 3 who went to the Minburi Health Center, only one of those interviewed went outside the community to have her baby. Informants usually considered the delivery uncomplicated; although, as noted, some labors were long.

Traditional midwives, who were not professionally trained but had learned from other traditional midwives before them, attended most of the mothers. One woman who was alone delivered the baby herself, one said she had no midwife but did not specify other help, and 2 had the help of women who did not ordinarily practice midwifery. The 3 women who were delivered at the Health Center had professionally trained help. Obstetrics as practiced in Bang Chan has been described by Hanks (1959).

Care of Mother During Postpartum Rest Period. - Traditional behavior during the postpartum rest period has been described by Hanks (1959).

Lying by the fire. - The ancient custom of (2)juu (1)faj[1] (literally to be by the fire) after childbirth was still observed by most women in Bang Chan. The chief difference between the practice as we observed it and as it was described in the Bangkok Calendar[2] for 1865 was in the length of the period. In former times this was as much as a month after the birth of the first child, with shorter periods for successive

1. See Appendix, p. 51 for glossary of Thai terms.

2. The unsigned article entitled "Siamese Obstetrics" was presumably written by the Rev. Dan Beach Bradley, M.D., a Protestant missionary who compiled the Calendar.

better nutrition for all family members or whether to concentrate on the feeding of children or other vulnerable groups, the values of the society should be considered. The importance of a suitable variety of food for health needs to be taught to adults as well as children in Bang Chan. The concept that good choice of food is important in pregnancy and lactation and for the health and growth of children seemed to be entirely absent. Since few believed certain foods to be harmful at these times, however, teaching how to choose foods for health should be easier in Bang Chan than it is in areas where positive taboos are common. 124 262

Behavior different from the traditional one may sometimes lead the way to changed practices among those who observe or hear about it. For this reason, in certain instances an informant who had ventured to deviate from the traditional practice has been identified in this record. Thus, we noted that in a number of ways the women school teachers and the wife of a man teacher deviated from the traditional behavior in Bang Chan. For example, a school teacher's wife used the hot ashes chamber after her fifth child rather than lying by the fire. She was one of two women informants who "ate all kinds of food" at this time when most women in the community restricted their diets very markedly. She did not consider taking the baby out into the sunshine harmful; indeed, she believed it would make the child stronger. This same mother was 1 of 4 in our series who had taken the baby to be vaccinated against smallpox. She and three women school teachers were among those who continued to give their babies boiled water to drink much longer than was customary in Bang Chan. The one person who suggested a specific food (eggs) as being good for a woman to eat during pregnancy was a school teacher. The two women who planned to go to the Minburi Health Center for delivery were school teachers. For lack of time after labor began they did not carry out their plans; but the fact that they intended to do, by choice, what was usually the last resort when labor proved long or difficult, may be significant. 121 183 178

Along with these departures from traditional ways and acceptance of some "modern" practices, the same persons might cling to other sorts of traditional behavior. The wife of a school teacher for example, though she thought that taking the baby into the sunshine might be favorable rather than harmful, said that if the baby were to be out very long she would cover its head with a beret to avoid bringing "cold" into the baby. This same mother took her child to the Minburi Health Center for treatment for a skin infection, but when the condition did not clear up immediately after modern therapy was begun, she took the child to a traditional doctor who prepared a decoction of herbs with which she treated the baby. [74] [278]

The behavior of respected persons, such as some of the school teachers, should be influential in helping to bring about

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164 [146] among children in Bang Chan is not known. One thing which residents of Bang Chan appeared to have in common with other populations which have been reported to be relatively caries free, was low intake of sugar, particularly in a form which would be apt to adhere to the teeth.

Adults up to 44 years of age, in the random sample, retained most of their teeth. A few adults in Bang Chan have had missing teeth crowned. More sound than missing teeth were found to be crowned, however, i.e. in this community a crowned tooth appears to have cosmetic value. [301]

759 [164] A variety of serious illnesses were found to occur among residents of Bang Chan. As a rule, local traditional practitioners were consulted first, but most persons reported to have been seriously ill eventually received treatment by outside practitioners with some training in modern medicine.

[844] [743] The majority of mothers in childbirth were attended by local traditional midwives, but a few difficult cases were taken to the government Health Center in the nearby town of Minburi, where a trained midwife was in attendance.

165 [163] Of 438 pregnancies reported by 84 mothers, over 90% resulted in live births. Of the 397 living children born to these women, 81% survived at the time of interview. Within the first month of life, 7% had died, and a total of 11% died within the first year. Tetanus was prominent among causes of death of infants under one month of age. Infantile beriberi caused some deaths among older infants. In a majority of cases, the cause of death of infants could not be clearly identified, but fever, debility and convulsions were the symptoms most commonly described.

146 [164] Almost half of the persons examined for possible signs of nutritional deficiency, 46% of the school children and 47% of the family sample, were free of such signs. The remainder, slightly more than one half of persons examined, had from 1 to 7 signs each. In general, more of the children and adolescents than the adults were free of possible signs of malnutrition, and the larger percentages of persons with 2 or more signs were in the groups of older persons examined. Signs most often noted, namely changes in tongue, lips, skin and hair, and absence of knee and ankle jerk, might reasonably be associated with apparent deficiencies of riboflavin, vitamin A and thiamine in the diet. The only clearly defined deficiency disease observed among residents of Bang Chan during the field study was beriberi.

14 Hemoglobin values of 11.5 g or less per 100 ml. were

BANG CHAN

Table 14

163 Relation of Live Births to Total Pregnancies as Reported by 84 Women in Bang Chan

	Number of mothers	Total cases	Percentage of total pregnancies
Pregnancies	84	438	100
Miscarriages	23	33	7.5
Deaths in utero	4	4	0.9
Stillbirths	3	4	0.9
Live births	84	397	90.6

Illness and Injury

759 Medical Services Available to Residents of Bang Chan. - Within the community of Bang Chan, about 8 traditional "doctors" and 15 traditional midwives practiced their skills. Three of the traditional practitioners were Buddhist priests. The others earned their living chiefly by farming. In addition, two or three persons who were skilled at massage, and at least one medium had some reputation for success in treating sick persons.

743 The nearest source of trained medical assistance was Minburi, the market town about 3 miles from Bang Chan. The staff of the Minburi Health Center, which was under Thai government auspices, included a first-class doctor, a dentist and a nurse-midwife. One or two beds were available for the use of critically ill patients until they could be taken to a hospital in Bangkok. For less critical illnesses, the second-class doctors who operated private clinics in Minburi seemed to get more patronage from residents of Bang Chan than did the doctor at the Health Center.

844 The majority of women in Bang Chan were delivered at home, by the traditional midwives. During 1952-53 we learned of two pregnant women who planned to go to the Minburi Health Center for delivery, but time did not permit them to carry out their plans. Some cases of prolonged or difficult labor were, [743] however, brought from Bang Chan to the Health Center, where a labor room and a delivery room were available in a separate wooden building. Facilities were very simple. Patients lay on

BANG CHAN

844 mats on the floor as most of them would have done at home.
[743] Relatives were welcome; indeed they were supposed to come and help.

164 12 Nature and Incidence of Illness and Injury, and Treatments Sought by Residents of Bang Chan. - Evidence concerning the nature of illness and injury in Bang Chan was obtained in connection with the clinical examination of school children and persons in the random sample of village households; from questions in two types of structured interviews with household heads: 1) in the entire village, and 2) in one hamlet, KY-7; and from the field notes of workers associated with the Cornell Thailand Project.

164 In connection with the clinical examination, information was obtained from heads of 30 of the 31 households whose members were examined (See schedule in Appendix A).[2] In this group, none reported any accident or injury, and 26 said that no member had been ill within the year. Illness was reported as occurring in 4 households only. In one of these, a 49-year old man reported loss of sensation over the extremities and other symptoms which led the physician in the research group to conclude that he had beriberi. As treatment, this man had used an herb recommended by a priest, a native medicine given him by a neighbor and had gone to a private clinic at Minburi where he received an injection.[1] In another family, a 39-year old man who had asthma, took an advertised remedy which he purchased from a drugstore. Two children in the third family had fever for 8 days, for which a traditional practitioner prescribed herbs. In the fourth family, a 1-year old child with eczema was taken first to a traditional practitioner, then to a private clinic in Minburi where he was given an injection.

164 128 On the basis of other observations, however, we believe that illness and injury are more common in Bang Chan than is suggested by the replies to this particular inquiry. For example, no mention was made in one of the households surveyed of a baby who had been too ill to be weighed and measured, when team members called, and who recovered in a day or two without outside help. Coming as they did at the end of the clinical examination which was new to most of those people, perhaps the questions asked seemed relatively unimportant. No attempt was made to probe beyond the person's reply to the questions as stated.

164 Replies to questions in connection with an intensive

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1. From casual observation, one is led to believe that the villagers have considerable confidence in "injections," although the nature of the injection received or desired, is not usually specified.

2 [see p.51 - Analyst]

757 to a second-class doctor in Minburi, then to a nearby Muslim
759 masseuse, then to a local traditional practitioner who gave her some jaa tom (cooked medicine). Another instance, recorded in the field notes, is that of a school teacher's baby who had abscesses on her head. The mother took her child first to Minburi, where she was given an injection and a sulfa drug to be taken orally. The child did not get well immediately, and before all of the drug had been taken, the mother took the child to a local traditional practitioner who gave her a decoction of herbs which was to be given by mouth. Thus in some cases, modern doctors were consulted first, and local traditional practitioners later, if relief was not as speedy as was expected. The experience in this one hamlet suggested a willingness to try a variety of treatments, and the existence of a considerable degree of confidence in modern medicine.

758 According to Ralis (1955), 213 of 335 household repre-
743 sentatives interviewed had visited a clinic or hospital. Of these, 156 had gone to Minburi, and 135 to hospitals or clinics in Bangkok, some having gone to both places. Of 250 hospital or clinic visits, 125 were for treatment or hospitalization; the bulk of the rest were to accompany patients or to visit hospitalized relatives or friends. No significant difference in reports about seeking treatment or hospitalization was found between groups of persons differing in literacy, or in socio-economic level.

164 Infectious disease. - The principal evidences of infectious disease noted in the course of the clinical examination for assessment of nutritional status were trachoma and smallpox scars. Occasional cases of ringworm and other fungus infection, and of pediculosis were observed by the physician.

When the 233 school children and 148 additional persons included in the random sample of village households are considered together, i.e. a total of 381 persons or more than one-fifth of the total population of the village, only 3% were found to have trachoma. Eleven of 13 cases found were among 237 children 7 to 14 years of age, i.e. an incidence for this group of 4.6%. Zimmerman (1931) reported 119 cases or 4.3% of all persons examined in Central Thailand, and 277 cases or 2.9% of persons examined in the whole Kingdom. Among the school children examined, however, he reported an incidence of 12.6%.

Of 381 persons examined in Bang Chan, only 10, or fewer than 3% had smallpox scars. Two cases only were in adults, the remaining 8 being among children of school age. Our records do not show when the most recent cases occurred in the village.
751 According to Zimmerman (1931), 88% of over 2200 school children examined had been vaccinated. No information was obtained concerning the proportion of residents of Bang Chan who had been

751 vaccinated but among school children the percentage is very high. During the survey period a health officer came to the Bang Chan elementary school to vaccinate children; and at that time at least one nearby resident, a school teacher's wife, brought her infant for vaccination.

164 Illnesses probably, in most cases certainly, of infectious origin, which were mentioned in the field notes, include the following, which are listed roughly in the order of frequency: skin disorders such as abscesses and boils, fever, respiratory disorders including colds and influenza, tuberculosis, "upset stomach," measles and diphtheria. Two cases of diphtheria with one death, occurred while the survey was in [744] progress. At this time health authorities came to the village to inoculate the children on a voluntary basis (Hanks et al. 1955). As already noted, malaria and typhoid (one case each), were mentioned as occurring during the year previous to the inquiry in Hamlet KY-7 (Hanks, 1954).

[759] [743] A number of references were made to history of cholera, smallpox and malaria, but these did not appear to be current threats. Two cases of severe diarrhea were called "cholera" but one was on the way to recovery the next day. The traditional practitioner who was asked to treat the other, urged that she be taken to the hospital, and himself accompanied the patient and family members. At the hospital, they were told that members of the family and neighbors should "get vaccinated and have their toilet covered."[1] No further mention of this case is made in the field notes, hence the correct diagnosis is not known to us.

Since a modern doctor was frequently not seen, diagnosis of disease was often uncertain. More often, major symptoms were described or the disorder was given a local name, for which there is no good English equivalent, such as various kinds of saang and lom.

Non-contagious disprders. - Among current non-contagious disorders mentioned in the field notes, in replies to questions on surveys, and in some cases observed by the physician, were the following, listed roughly in order of frequency: menstrual disorders, headaches, boriberi, cancer, asthma, eczema, nephritis, and rheumatism.

Accidents. - Accidents which were recorded in field notes include bites of dogs, spiders, leeches and snakes, falls from buffaloes and down ladders, burns, cuts, drowning and poison from drinking kerosene. Among the school children examined,

1. Field notes, S.S., April 29, 1954.

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• 743 #177 #178 [8. Institutional Care of the Sick: Equally important as agricultural innovations in raising the level of living of an area such as Bang Chan are the efforts to improve the health and welfare of the population. Since the thirties there has been a clinic in the neighboring market town of Minburi and some Bang Chan farmers used clinics and hospitals in Bangkok before that time. Only about a third (34 per cent) say they have never been to a clinic or a hospital; over a third (37 per cent) have themselves gone for treatment; about one fourth (23 per cent) report having brought a patient there; over one tenth (12 per cent) say they visited relatives there; and a few (3 per cent) say they went there for various other reasons.*

ANALYSIS OF DATA ON AGRICULTURAL INNOVATIONS

121 The central question to which the present analysis directs itself is: What are some of the factors which may be said to account for the fact that certain members of the community are willing to try out these innovations and to continue using them, while others are unwilling even to make the initial attempt? Is there some general pattern to be discerned among the several innovations? Is there any discernible clustering among them; that is, are some community members more "innovation-minded" than others, in the sense that if they try out or accept one innovation they are more likely to accept another? Or are these innovations accepted independently of each other? The following analysis of the survey responses attempts to shed some light on these and related problems.

Factors in Acceptance of Agricultural Innovations

241 402 #177 #178 Use of the small motor is basic to acceptance of other agricultural innovations. Although only a minority of the persons of Bang Chan report that they own a small motor, many more used this machine through joint ownership or borrowing. Indeed, knowing whether a person owns or uses such a motor is a useful indicator of his readiness to accept other agricultural innovations. If he owns or has used a motor, then he is about five times more likely than others to try fertilizer, about two and a half times more likely to try raising tilapia, and about one and a third times more likely to try straw mushrooms.

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[125] * The question: "Have you ever been to a clinic or hospital...? In what various places...? For what various purposes did you go ...?"

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228 And so much tendency may be discerned in the present data. (See
241 Table 2.)
244 TABLE 2. USERS OF HOSPITAL AND CLINIC FACILITIES SHOW NO SIGNIFI-
CANT DIFFERENCES IN RATES OF ACCEPTANCE OF AGRICULTURAL
INNOVATIONS

Agricultural Innovations	Percentage who have ever gone to hospital or clinic for treatment	Total cases
Mushrooms		
Tried them out	34%	(143)
Never did	30	(186)
Tilapia		
Tried it out	44%	(104)
Never did	36.	(225)
Water		
Tried it out	37%	(213)
Never did	34	(106)
Fertilizer*		
Tried it out	37%	(32)
Never did	34	(232)

* Farmers only

228 In the second place: use of the water is much less strongly
241 linked to use of mushrooms than the use of fertilizer or tilapia.
244 It may well be that there may be some common factor strongly under-
lying the decision to use the water on the one hand, fertilizer and
tilapia on the other, while the decision to try mushroom-growing
402 is relatively more "autonomous". A possible explanation for the
greater "autonomy" may be sought in the differential requirements
*177 for growing mushrooms compared with the requirements for adopting
*178 the other innovations.

Both tilapia and sulphates demand extra heavy work, care, an essential initial investment, and willingness to wait for a delayed return. An additional requirement for a successful and continuous pay-off from both these innovations may be an aptitude to follow rather complicated instructions. In the case of mushroom growing, however, the initial investment is relatively small, the labor may be tedious but is not heavy, no protracted or complicated care is involved, and the results of the effort are relatively quickly realizable.

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426 One is tempted to speculate about the significance of this re-
402 lationship. One possibility deserves further investigation if the data were only available. If one important reason for incurring debts is to secure or to replace capital equipment, then those farmers more willing to make a capital investment, even though they incur a debt, are more likely to use the motor. Conversely, farmers unwilling or unable to contract debts for a basic improvement in their capital equipment might be the ones less likely to adopt an innovation such as the motor.

Other Factors

121 A number of other factors which conceivably might have been expected to differentiate those who tried out these innovations from those who never made an attempt to use them were investigated and proved to have no differentiating power. Factors such as age and family size, for example, were examined to see whether differential acceptance existed among younger compared with older age groups, or small as compared with large families. No such differences appeared. In the same way, the survey's rough measures of community integration and identification, certain religious beliefs and superstitions, certain personality traits, of knowledge of political figures, and willingness to perform industrial work likewise revealed no differential rates of acceptance when groups were compared.

*178 USE OF MODERN HEALTH FACILITIES

• 743 Improvements in agricultural production must certainly not be
75 viewed as the only efforts worthy of attention to raise the level of living in Bang Chan. Equally important are efforts to train the population to use modern health practices and facilities.

Hospitals have been available since the twenties in Bangkok and a clinic in Minburi since the thirties. Despite these facilities, much curing continues in the traditional way through priests or certain farmers of the locality who have learned from other practitioners to compound medicines, set bones, deliver babies and expel demons.

743 In the present survey the majority of respondents reported
[125] that they have sometimes in their lives used hospital or clinic facilities. To the question, "Have you ever been to a clinic or hospital?" 63 per cent answered affirmatively. Less than half of those who replied indicated having gone for their own treatment or hospitalization, the remainder for other reasons. The distribution of responses is given below.

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[125]

"Have you ever been to a clinic or a hospital? (If yes) For what various reasons?

No, never went	37%
Yes	63
For treatment or hospitalization	37*
To bring a patient there	23*
To visit relative(s) or friend(s)	14*
Other reasons	3*

* These responses should not be cumulated since some respondents reported more than one reason for going.

If, indeed, the responses to this question are to be considered a valid index, one would expect respondents who reported having used these facilities also to report a higher incidence of visits to Bangkok, where the available hospitals are located. This expectation is confirmed by the responses to the two relevant questions.

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TABLE 25. INCIDENCE OF TRIPS TO BANGKOK IS HIGHER AMONG RESPONDENTS WHO REPORT VISITS TO CLINIC OR HOSPITAL

"In the past year, how many times did you go to Bangkok...?"	Have you ever been to a clinic or a hospital?"		
	Yes, for treatment (123)	Yes, for other reasons (91)	No (118)
Ten or more times	32%	31%	17%
Two to nine times	40	37	29
Once	13	12	23
Never	15	20	30

The present study now asks what factors are associated with use of modern health facilities.

Demographic Characteristics of Hospital Users

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It is important to answer one question in advance of more detailed analysis. Does an affirmative reply to the question, "Have you ever been to a hospital or clinic" measure need for medical care rather than acceptance of modern health practices.

No direct measure is available of the actual state of health of the survey respondents. But, assuming that older people need medical care more than younger people, then we have an indirect index of whether or not hospital use is higher among people of advanced age. The data show no such relationship.

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TABLE 26. INCIDENCE OF HOSPITAL AND CLINIC VISITS IS SIMILAR FOR ALL AGE GROUPS

Have you ever been to a clinic or a hospital?	20-29 (41)	30-39 (80)	40-49 (83)	50-59 (66)	60 or over (57)
No, never	31%	31%	34%	37%	41%
Yes, for treatment	39	44	39	31	31
Yes, for other reasons	29	25	25	32	28

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If the responses reflect primarily the need for medical care, women who bear children have a greater need for medical care than men, and one would therefore expect hospital use to be higher among women than men. But again, this hunch is not clearly borne out by the results.

TABLE 27. INCIDENCE OF HOSPITAL AND CLINIC USE IS SIMILAR FOR MEN AND WOMEN

Have you ever been to a clinic or a hospital?	Women (90)	Men (245)
No, never	41%	35%
Yes, for treatment	31	39
Yes, for other reasons	28	26

There is, then, reasonable justification for inferring that reported use of clinics or hospitals reflects predisposition to use modern health facilities and not simply a need for medical care.

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Economic Level

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Although higher economic level was linked to the principal agricultural innovations, it is not related to use of hospital or clinic facilities.

Literacy

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On the other hand, just as literate persons were more disposed to use the major innovations (p. 19), in the same way those who can read and write report a greater incidence of hospital or clinic use.

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TABLE 28. INCIDENCE OF HOSPITAL AND CLINIC USE IS HIGHER AMONG LITERATE VILLAGERS

Have you ever been to a clinic or a hospital?	Literate (163)	Illiterate (169)
No, never	27%	44%
Yes, for treatment	42	33
Yes, for other reasons	31	23

Apparently here, too, exposure to sources of information predisposes the inhabitants to greater acceptance of modern health practices.

Exposure to Mass Media

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Again, as with agricultural innovations, exposure to the media of mass communication is linked to acceptance of modern health practices.

TABLE 29. INCIDENCE OF HOSPITAL AND CLINIC USE IS HIGHER AMONG VILLAGERS EXPOSED TO MASS MEDIA

	Movie Attendance		
Have you ever been to a clinic or hospital?	Ten or more times (161)	4-9 times (60)	Three times or less (109)
No, never	25%	32%	55%
Yes, for treatment	48	33	22
Yes, for other reasons	27	35	23

	Radio Listening		
	Daily or occasionally (111)	Seldom (148)	Never (60)
No, never	20%	39%	58%
Yes, for treatment	52	33	18
Yes, for other reasons	28	28	23

Mass Media as a Substitute for Literacy

It will be recalled (see p. 21) that the mass media seem to act as a substitute for literacy. The same relationship reappears here. The table following indicates that literacy links with use of hospitals or clinics only when exposure to mass media is rare. [212]

*178 With more frequent exposure to these media, the link between literacy and use of hospitals or clinics decreases.
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TABLE 30. EXPOSURE TO MASS MEDIA IS LINKED TO HOSPITAL USE, ESPECIALLY AMONG ILLITERATES

	Literate (Proportion reporting use of hospital or clinic)		Illiterate (Proportion reporting use of hospital or clinic)	
Movie Attendance				
High (ten or more times)	78%	(103)	71%	(38)
Low (nine times or less)	64	(36)	48	(111)
Radio Listening				
High (listen "frequently")	81%	(48)	79%	(42)
Low (listen "seldom or never")	66	(88)	48	(122)

*178 Acceptance of Urban Practices

369 Table 17 showed that acceptance of certain urban practices was
743 linked to acceptance of the major agricultural innovations. Acceptance of urban practices is also associated with use of clinics and hospitals. Use of modern medicine is significantly higher among those who no longer eat with their hands than among those who do.

TABLE 31. ACCEPTANCE OF URBAN PRACTICES IS LINKED TO USE OF CLINIC AND HOSPITAL FACILITIES

	Customarily Eat With Fork or Spoon (84)	Hands (343)
Have you ever been to a clinic or a hospital?		
No, never	26%	39%
Yes, for treatment	48	33
Yes, for other reasons	26	28

*178 Contact Outside Bang Chan

369 It has already been reported (see Table 23) that hospital and
484 clinic use is higher for those who, during the past year, have
743 paid more frequent visits to Bangkok. This correlation may seem, at first, spurious, since the main centers of medical care are situated in Bangkok. But the questions asked about contact with Bangkok for the one-year period preceding the survey, and visits to the hospital or clinic over an unspecified time period chose

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that the relation of these two indices appears valid. In addition there is further substantiation of the hypothesis that contacts with the world outside Bang Chan are linked with use of modern medical practices: The incidence of such use is significantly higher among those who have visited the airport than among those who have never done so.

TABLE 32. INCIDENCE OF HOSPITAL OR CLINIC USE IS HIGHER AMONG THOSE WHO HAVE VISITED THE AIRPORT

	Trips to the Airport: None (148)	One (58)	Two or more (134)
Have you ever been to a clinic or a hospital?			
No, never	41%	36%	28%
Yes, for treatment	35	40	39
Yes, for other reasons	24	24	33

Moreover, additional support for this contention is found in the higher incidence among hospital and clinic users, of knowledge of the world outside the community.

It is reasonable to assume that greater contact with the capital city is likely to increase the farmers' awareness of its major public figures. And, indeed, the incidence of hospital and clinic use is highest among those who are able to name correctly certain of Thailand's major public figures, as the Prime Minister and the National Police Chief.

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TABLE 33. INCIDENCE OF HOSPITAL OR CLINIC USE IS MORE WIDESPREAD AMONG VILLAGERS WHO ARE AWARE OF THAILAND'S PUBLIC FIGURES

	Have you ever been to a hospital or a clinic? No, Never	Yes, for other reasons	Yes, for treatment	Total 100%
...Who is now the Prime Minister of Thailand ...Would you please tell me his name?				
Names Prime Minister	27%	30%	43%	(192)
Does not know	48	23	29	(140)
...Who is now the Chief of Police of Thailand...Would you please tell me his name:				
Names Chief of Police	23%	31%	46%	(166)
Does not know	48	23	28	(164)

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* 743 Use of Health Facilities and Other Factors Associated With
241 Agricultural Innovations
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426 Although use of the basic agricultural innovations was shown to be linked to breadth of contacts within the community, on the one hand, and to indebtedness, on the other hand, the association between these factors and use of modern health facilities, although showing the same tendency, is not statistically significant. For the sake of completeness, the figures are reported below:

TABLE 34. NO RELATIONSHIP BETWEEN INDEBTEDNESS OR INTERNAL SOCIAL CONTACTS AND USE OF HOSPITALS AND CLINICS

	"Have you ever been to a clinic or a hospital?"			
	No, Never	Yes, for treatment	Yes, for other reasons	Total 100%
Social Contacts				
"More friends"	31%	35%	34%	(62)
"The same"	40	35	25	(134)
"Fewer friends"	32	41	27	(94)
Do you now have a debt?				
No	40%	32%	28%	(140)
Yes	33	41	26	(193)

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SUMMARY

1. In the community of Bang Chan in Central Thailand, various factors are studied statistically in order better to determine the conditions of acceptance of selected agricultural innovations and conditions for using the facilities of modern medicine in clinics and hospitals. Four agricultural innovations were selected, viz. gasoline motor, raising of fish (tilapia), use of fertilizer, and mushroom culture.

2. The present study was concerned with the initial adoption or trial of innovations, rather than the continuing use of these innovations or the merging of the new with the old features of the culture.

3. While adoption of the gasoline motor was associated with all other agricultural innovations, no generalized acceptance of the new was found because: a) adoption of the gasoline motor bore little or no relation to use of non-agricultural innovations such as hospital and clinic facilities; and b) adoption of gasoline motors was only weakly associated with raising of mushrooms.

4. A cluster of traits including high motivation and sizable capital outlay was associated with the use of the gasoline motor.

The motor users formed a group with higher economic level, greater literacy, higher acceptance of urban ways of life, more frequent exposure to mass media, broader social contacts within the community, and greater use of credit facilities. Illiterate farmers might also be motor users, if their contacts with urban centers were extensive.

5. Acceptance of mushroom culture was a special case of agricultural innovation: a) as distinct from all other attitudes toward innovation, mushroom growers were not marked by their high positive attitudes toward mushroom culture; b) the investment in mushroom raising per se was less than the investment and risk required by other types of agricultural innovation.

6. The mushroom growers as a group distinct from non-mushroom growers were more literate and acceptive of urban ways. Tilapia raisers were of a higher economic level and had greater community contacts than non-tilapia raisers.

7. An hypothesis was offered: that innovations differ in complexity and investment of effort required. The more complex presuppose greater investment, work, risk and postponement of returns; hence this complex kind requires greater motivation than the simpler ones such as mushroom raising.

8. Use of hospital and clinic facilities was more frequent among the literate, those exposed to mass media, those accepting of urban ways and those having greater contacts with the city. Unlike accepters of agricultural innovations, users of modern medical facilities were not of a higher economic level than non-users and could not be clearly distinguished on the basis of breadth of contact within the community or use of credit facilities.

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32. Last night, when you ate at your own house, did you eat with your hands, with fork and spoon, or with spoon alone? [125] [264]

9. Hands	242
X. Fork and Spoon	11
Y. Spoon alone	73
O. Unascertainable	7

33.a. Have you ever been to a clinic or a hospital? [743]

1. Yes	214
2. No	119

b. IF YES: In what various places?

3. Minburi	156
4. Bangkok	135
5. Other place	7
6. Unascertainable what place.	

c. IF R HAS BEEN TO CLINIC OR HOSPITAL: For what various purposes did you go?

7. Treatment or hospitalization	123
8. To bring a patient there	77
9. Visit relatives or friends	45
X. Other reason, specify_____	11
O. Unascertainable	—

34.a. During the last year, did it occur to you frequently, sometimes, or never that you had difficulties falling asleep? [513]

1. Frequently	73
2. Occasionally	151
3. Never	109

b. During the last year, did it occur to you frequently, sometimes, or never that you had a headache? [164]

4. Frequently	50
5. Occasionally	174
6. Never	109

c. During the last year, did it occur to you frequently, sometimes, seldom or never that you lost your appetite?

7. Frequently	50
8. Occasionally	173
9. Never	110

d. During the last year, did it occur to you frequently, sometimes, or never that your hands trembled so as to bother you? [164]

X. Frequently	17
Y. Occasionally	93
O. Never	218
— No Answer	5

e. During the last year, did it occur to you frequently, sometimes, or never that your heart beat so fast as to bother you?

1. Frequently	36
2. Occasionally	154
3. Never	141
— No Answer	2